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# CHAPTER 16

## **HAZARDOUS MATERIALS COMMUNICATION PROGRAM**

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# CHAPTER 16

## **HAZARDOUS MATERIALS COMMUNICATION PROGRAM**

A copy of this chapter shall be posted in each worksite where hazardous materials are used, and a copy should be made available, upon request, to interested employees, or their designated representatives.

### **16.00 INTRODUCTION**

This chapter describes proper handling of hazardous materials requirements in the workplace. General Industry Safety Order (GISO), Section 5194 Hazard Communication, requires employers to have a written hazardous materials communication program if hazardous materials are present in the workplace.

### **16.01 PURPOSE**

Detailed information is provided regarding hazardous material container labeling, inventory procedures, Material Safety Data Sheets (MSDS), hazardous materials training, and industry-wide hazard warning labeling systems.

### **16.02 POLICY STATEMENT**

Employees shall be provided information and training regarding any hazardous materials to which they may be exposed. Additionally, no hazardous materials will be delivered, stored, or used at any Caltrans worksite or facility unless they are properly labeled, tagged, or marked and the MSDS is readily available.

### **16.03 ROLES AND RESPONSIBILITIES**

**Managers And Supervisors** are responsible to ensure that all elements of this program, including inventory listings, MSDSs, labeling, and training are implemented and provided to all employees who are exposed, or can reasonably expect to be exposed to hazardous materials.

**Supervisors** shall notify their employees and any employees working nearby of any hazardous materials they may be exposed to at a facility or project. They shall also maintain copies of MSDS's in a printed format that is readily accessible to employees for the hazardous materials used at each workplace. MSDSs shall also be available to designated representatives and employees' physicians.

Providing copies of this chapter to interested persons is not a substitute for informing and training employees regarding hazardous materials, but is an additional requirement of the California Occupational Safety and Health Administration (Cal-OSHA).

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**Caltrans Employees** shall notify their supervisor of any new hazardous material that is brought on the worksite, that employees may encounter.

**Resident Engineers/Contract Administrators/Supervisors** shall notify non-Caltrans personnel who may have exposure to hazardous materials at the worksite. In addition, they shall notify non-Caltrans personnel of any new hazardous material that may be brought on the worksite by Caltrans or by others under Caltrans' direction.

**Headquarters Office of Health and Safety (H&S)** is responsible to: oversee the Department's Hazardous Materials Communication Program (HMCP); disseminate information; and provide direction to managers and supervisors regarding hazardous materials. This includes providing information and assistance to supervisors to obtain MSDSs and to provide the required training.

Headquarters, H&S will also administer and oversee the HMCP for Sacramento area supervisors and others not specifically assigned to local district offices.

**District Health and Safety Officers** shall be responsible to administer and oversee the HMCP at the district level. This includes providing information and assistance to supervisors to obtain MSDSs and to provide the required training.

#### 16.04 DEFINITIONS

**Hazardous Materials** -- any substance that is a physical or health hazard, or is included on the Cal-OSHA Director's List of Hazardous Substances or or listed in Title 22 of the California Code of Regulations, Section 12000, "Chemicals known to the State to cause Cancer or Reproductive Toxicity" (Proposition 65 Substances.)

**Physical Hazard** -- any substance that is: a combustible liquid; a compressed gas, explosive; flammable; an organic peroxide; an oxidizer; pyrophoric (ignites spontaneously in air at 130° F or less); unstable (reactive); or water reactive.

**Health Hazard** -- any substance for which there is significant scientific evidence that exposure may cause acute or chronic health effects or measurable changes in the body. This includes carcinogens; toxic or highly toxic agents; reproductive toxins; irritants; corrosives; sensitizers; hepatotoxins; nephrotoxins; neurotoxins; agents that act on the hematopoietic system; and/or agents that damage the lungs, skin, eyes, or mucous membranes.

## 16.05 EMPLOYEES' RIGHT TO KNOW

As part of the Caltrans HMCP, employees have the right:

- To personally receive information about the hazardous materials to which they may be exposed;
- To have their physician or collective bargaining agent receive information about the hazardous substances to which they may be exposed; and
- To not be discriminated against when exercising their "right to know" under the HMCP.

## 16.06 HAZARD WARNING AND LABELING SYSTEMS

To ensure that all users understand the health risks and hazards associated with various products, a *Hazard Warning and Labeling System* using words, pictures, symbols, or a combination of these will appear on labels or other forms of marking on containers to convey any health and/or physical hazards of the substance(s).

Two of the most common labeling systems are the National Fire Protection Association (NFPA 704), and the Hazardous Materials Identification System (HMIS). These systems provide a numeric key to indicate the relative hazard of the material in the areas of Health, Flammability, and Reactivity. The number system is from "0" for non-hazards to "4" for extreme hazards.

The NFPA hazard warning (with labeling system numbers) is diamond-shaped and displayed on a color-coded symbol or label as follows:

- **Blue** (left corner) background for **health** hazard;
- **Red** (on top) background for **flammability** hazard;
- **Yellow** (right corner) background for **reactivity** hazard; and
- **White** (bottom) background for **special** hazardous properties of the material; e.g., oxidizer, poison, water reactive, etc.

The HMIS system also includes a field for required personal protective equipment (PPE) to be used with the hazardous material.

There are rare exceptions when the NFPA hazards will be written horizontally, left to right as: NFPA-"A"- "B"- "C"- "D", in this arrangement, health is the first, then flammability, reactivity, and special hazards.

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The NFPA and HMIS systems of using words, pictures, symbols, or combinations are illustrated at the end of this chapter.

Contact H&S for additional information on rating systems.

### **16.07 LABELING OF HAZARDOUS MATERIALS CONTAINERS**

All hazardous materials received must be labeled, marked, or placarded in accordance with the U. S. Department of Transportation regulations. The original label markings will be maintained in a clean and legible condition for as long as a container might be re-shipped or transported to another location.

Supervisors are responsible to ensure that every hazardous materials container is properly labeled, tagged, or marked to identify the contents, the appropriate hazard warnings, and the name and address of the manufacturer.

No container shall be used or stored with a damaged or defaced label. Supervisors and employees are responsible to replace damaged or defaced labels immediately.

Secondary containers; e.g., buckets, cans, pitchers, etc., must also be labeled, tagged, or marked to identify the hazardous contents, **unless the contents are to be used in their entirety during the work shift.**

### **16.08 INVENTORIES**

Supervisors shall maintain a written inventory of all hazardous substances available in the workplace and shall make the list available to all employees. The list shall be updated annually and whenever new products are introduced.

### **16.09 NEW MATERIALS**

**All new materials that contain hazardous substances shall not be used until employees have been trained in their proper use, handling, and disposal and their supervisor has reviewed with them the MSDS covering the specific substance(s).**

Employees must also be trained in the hazards of, protective equipment for, and symptoms of over-exposure to the material.

New materials that have not been approved for use through the Department's "New Products Evaluation" process will not be used.

Contact the Division of Engineering Services, Materials Evaluation and Testing Services for additional information, or contact Headquarters or District Health and Safety Offices for assistance.

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## 16.10 MATERIAL SAFETY DATA SHEETS (MSDS)

MSDSs are prepared by manufacturers and suppliers of products that contain hazardous materials. The MSDS is provided to the users of the product to ensure they have the information necessary for product safety use, and are fully informed of the associated risks and hazards.

The State warehouse will provided MSDSs for hazardous materials supplied by them.

MSDSs include the following information:

- Chemical identity of the hazardous ingredients;
- Other ingredients if it is a mixture;
- Manufacturer's name, address, and telephone number;
- Physical and chemical properties of the substance;
- Hazardous reactivity (how the chemical/product will react in a fire or explosion);
- Health hazard information, including emergency first aid procedures in the event of exposure, and progressive symptoms;
- PPE required while using the product;
- Storage, spill, and waste disposal procedures;
- Directions for shipping and transporting;
- Whether the hazardous ingredients are classified as carcinogens or potential carcinogens; and
- Routes of entry into the body.

The supervisor will maintain a file of relevant MSDSs located at the workplace or where employees report to work. Traveling crews shall carry relevant MSDSs with them. MSDS files shall be kept current and new or updated MSDSs will be added immediately.

**For herbicides and pesticides, the product label and the MSDS are required on the job site.**

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## 16.11 TRAINING

All employees who work with hazardous materials shall be trained at the time of their initial assignment and whenever a new hazardous material is introduced.

**General training** is offered by H&S or others and provides information regarding the program labeling systems and MSDSs. The general training shall include:

- Caltrans HMCP;
- MSDSs;
- Labeling requirements;
- Employees' rights;
- Location and availability of this chapter;
- PPE (types and uses);
- Detection of hazardous materials leaks and releases;
- Proper storage and handling; and
- Emergency spill, accident, and fire procedures.

The general training shall be renewed every two (2) years and recorded on a standard Form 300, use G # 21820.


**Specific training** is provided by supervisors to employees performing infrequent or non-routine tasks that may involve exposure to hazardous materials prior to performing the task. Specific training on the particular dangers and characteristics of the hazardous material shall include:

- MSDSs;
- Labeling requirements;
- Physical and health hazards;
- Warning properties and symptoms of exposure;
- Appropriate work practices;
- PPE necessary;
- Emergency spill, accident, and fire procedures; and
- How the materials are used by Caltrans.

Specific training will be provided continuously so that employees are trained on all products they use. Record "specific" type training on a "tailgate" safety meeting report or equivalent form.

**Training records:** Supervisors shall maintain records for three (3) years to demonstrate that each employee has been trained regarding the hazardous materials they use or to which they are exposed.

## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) SYSTEM



### HEALTH HAZARD—BLUE

**4** Materials which on very short exposure could cause death or major residual injury even though prompt medical treatment were given.

**3** Materials which on short exposure could cause serious temporary or residual injury even though prompt medical treatment were given.

**2** Materials which on intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical treatment is given.

**1** Materials which on exposure would cause irritation but only minor residual injury even if no treatment is given.

**0** Materials which on exposure under fire conditions would offer no hazard beyond that of ordinary combustible material.

### FIRE HAZARD—RED

**4** Materials which will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature, or which are readily dispersed in air and which will burn readily.

**3** Liquids and solids that can be ignited under almost all ambient temperature conditions.

**2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

**1** Materials that must be preheated before ignition can occur.

**0** Materials that will not burn.

heated under confinement before initiation or which react explosively with water.

**2** Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Also materials which may react violently with water or which may form potentially explosive mixtures with water.

**1** Materials which in themselves are normally stable, but which can become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently.

**0** Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.

### REACTIVITY—YELLOW

**4** Materials which in themselves are readily capable of detonation or of explosive decomposition or reaction at normal temperatures and pressures.

**3** Materials which in themselves are capable of detonation or explosive reaction but require a strong initiating source or which must be

### SPECIFIC HAZARD—WHITE

<b>OX</b> Oxidizing Properties	<b>COR</b> Corrosive
<b>ACID</b> Acid	<b>AW</b> Adverse Reaction with Water
<b>ALK</b> Alkali	<b>RA</b> Radioactive

## HAZARD INDEX COLOR CODE:

FIRE HAZARD	=	RED BACKGROUND, BLACK LETTERS
HEALTH HAZARD	=	BLUE BACKGROUND, WHITE LETTERS
REACTIVITY	=	YELLOW BACKGROUND, BLACK LETTERS
SPECIFIC HAZARD	=	WHITE BACKGROUND, BLACK LETTERS

## NOTE:

MAY ALSO BE WRITTEN:

X	X	X
HEALTH HAZARD	FIRE HAZARD	REACTIVITY

“X” REPRESENTS HAZARD INDEX NUMBERS (4,3,2,1,0)



HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

HAZARD INDEX

Hazardous Materials Identification System																													
HMIS®																													
HAZARD INDEX	PERSONAL PROTECTION INDEX																												
<b>4 Severe Hazard</b> <b>3 Serious Hazard</b> <b>2 Moderate Hazard</b> <b>1 Slight Hazard</b> <b>0 Minimal Hazard</b>	<table border="1"> <tr> <td><b>A</b></td> <td></td> <td><b>H</b></td> <td> +  +  + </td> </tr> <tr> <td><b>B</b></td> <td> + </td> <td><b>I</b></td> <td> +  + </td> </tr> <tr> <td><b>C</b></td> <td> +  + </td> <td><b>J</b></td> <td> +  +  + </td> </tr> <tr> <td><b>D</b></td> <td> +  + </td> <td><b>K</b></td> <td> +  + </td> </tr> <tr> <td><b>E</b></td> <td> +  +  + </td> <td><b>X</b></td> <td>Ask your supervisor for specialized handling directions</td> </tr> <tr> <td><b>F</b></td> <td> +  +  + </td> <td></td> <td></td> </tr> <tr> <td><b>G</b></td> <td> +  + </td> <td></td> <td></td> </tr> </table>	<b>A</b>		<b>H</b>	+  +  +	<b>B</b>	+	<b>I</b>	+  +	<b>C</b>	+  +	<b>J</b>	+  +  +	<b>D</b>	+  +	<b>K</b>	+  +	<b>E</b>	+  +  +	<b>X</b>	Ask your supervisor for specialized handling directions	<b>F</b>	+  +  +			<b>G</b>	+  +		
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<b>REACTIVITY</b> <b>PERSONAL PROTECTION</b> <div></div>																													
	<table border="1"> <tr> <td>Safety Glasses</td> <td>Face Shield</td> <td>Splash Goggles</td> <td>Airline Hood or Mask</td> <td>Gloves</td> <td>Synthetic Apron</td> <td>Dust Respirator</td> <td>Vapor Respirator</td> <td>Dust &amp; Vapor Respirator</td> <td>Full Suit</td> <td>Boots</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Safety Glasses	Face Shield	Splash Goggles	Airline Hood or Mask	Gloves	Synthetic Apron	Dust Respirator	Vapor Respirator	Dust & Vapor Respirator	Full Suit	Boots																	
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NOTE:

- HAZARD INDEX NUMBER: 4,3,2,1,or 0 must be written in box next to hazard index.
- HAZARD INDEX COLOR CODE:

HEALTH	=	BLUE BACKGROUND, WHITE LETTERS
FLAMMABILITY	=	RED BACKGROUND, WHITE LETTERS
REACTIVITY	=	YELLOW BACKGROUND, BLACK LETTERS
PERSONAL PROTECTION	=	WHITE BACKGROUND, BLACK LETTERS